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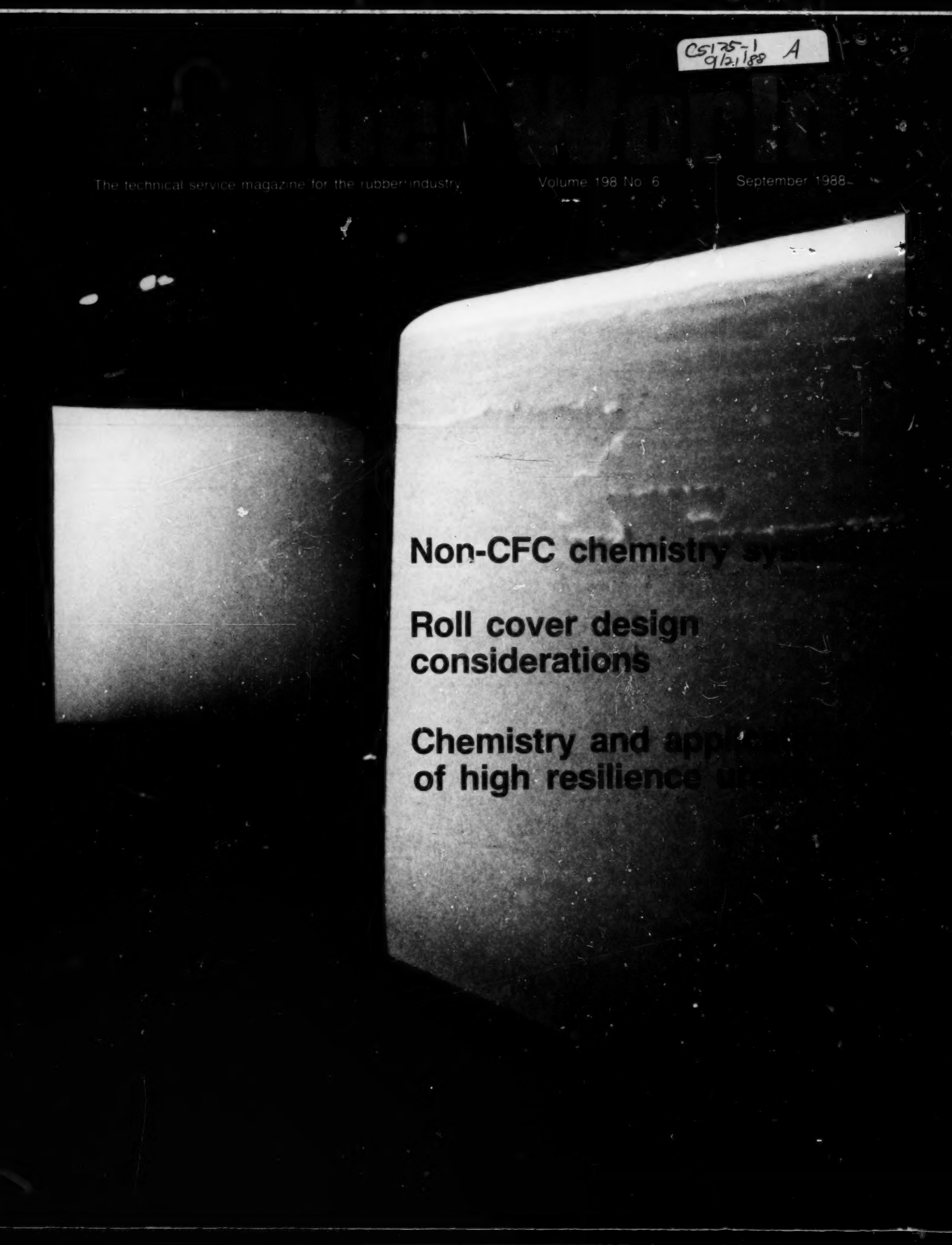

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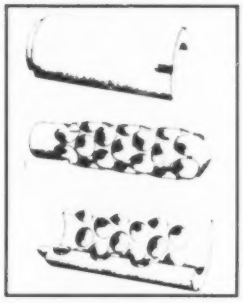

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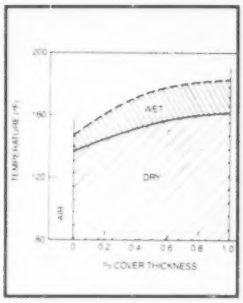

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by Jon Menough, contributing technical services editor. The use of a cavity transfer mixer for blending widely dissimilar materials, after being properly set up with extruders and associated equipment, is discussed in this month's column.

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Editorial

When Thomas Midgley introduced chlorofluorocarbons it is said he inhaled a quantity and blew out a candle to illustrate the harmlessness and non-flammability of the chemical. And it was exactly what he said it was, and turned into the wonder chemical of the day. It was deemed completely safe because CFCs do not react with other substances or break down. But as technology moved on, the safeness of these chemicals, used considerably as blowing agents in polyurethane manufacturing, came into question and now their is no doubt CFCs cause serious harm to the environment of the whole planet. Their connection to the depletion of the earth's ozone layer has been confirmed and now there is talk that the recent Montreal Protocol isn't sufficient enough. That pact has CFC production frozen at 1986 levels with a 20% reduction to be enacted in 1993 and another 30% cut scheduled in 1998. The agreement takes force January 1, 1989, but there are already calls for speeding up some of the cutback dates. Newer data on ozone depletion shows that the agreement will not reduce depletion, only slow the growth. If the ozone is to be repaired back to pre CFC conditions a near total ban is called for.

This is definitely not good news to polyurethane processors. A reduction in CFC production was unheard of five years ago, now a total ban has been suggested. A few years ago the chance of a total ban was zero but the odds go up with every new report. It's safe to say the use of CFCs in polyurethane processing will see the same fate as CFC use in aerosol sprays.

What's encouraging from this is the reaction of the polyurethane industry. It has mobilized suppliers and processors through its technical groups and the suppliers of CFCs will pool technology. This year's Polyurethane World Congress made CFC substitution a top priority and the upcoming SPI Polyurethane 88 meeting will feature a special panel on the subject along with several papers on the latest developments in alternative technologies. (This month's Urethane Forum on page 12 discusses a new chemistry system). And recently, eight worldwide producers of CFCs announced they will pool resources to test HCFC-141b, currently under consideration to replace CFC-11. The HCFC has significantly reduced ozone depletion potential and by pooling resources the development time can be reduced from about six or seven years to five.

The alternatives will not be cheap. Cost estimates range from at least double to as much as four times as much as CFCs cost. However, it won't be a surprise. You know it's coming and can plan for it. Just as all industries should somehow be planning for other, similar restrictions. Ozone depletion is serious and serious solutions are being considered. Land, air and sea pollution is also serious, as is acid rain, and the greenhouse effect. Serious solutions could be legislated that will have a profound effect on the way you do business. Those that stay on top of things will have a step up on the competition. Those that don't may be headed for the same fate as CFCs.

Don R. Smith
Editor

RubberWorld

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Business Briefs

BRISA Bridgestone Sabanci Tire Manufacturing has been formed through a joint venture between **Bridgestone** and **The Sabanci Group** of Turkey. Bridgestone is acquiring an equal 36% share of Sabanci's original 72% holdings in the tire operations of **LASSA Tire Manufacturing**. The joint venture will incorporate Bridgestone technology and will increase production of passenger radials, as well a new line-up of truck and bus products.

Mitsubishi Heavy Industries and **L & T McNeil Ltd.**, Madras, India concluded an agreement covering tire production machines. MHI provides manufacturing technology on a tire building machine, a bias cutter and a hydraulic passenger tire curing press. McNeil will assemble and manufacture these machines from MHI component parts and locally procured components.

R W Technology, Inc. licensed **American Typlax Systems**, Washington, PA its manufacturing technology, the process and formulations to recycle discarded tires and other rubber waste products and to produce a rubber/plastic blend called Typlax.

UCB and **RTZ Chemicals** have formed a company for the development, production and distribution of specialty chemicals used in radiation curable formulations. The new company will consist of a worldwide organization with operating subsidiaries in the U.S. and Europe, and licensees in the Far East.

P.T. Victory Long Age Indonesia, a joint venture between **Long Age Industrial** of Taiwan and an individual Indonesian investor will manufacture 1.5 million sport shoes yearly in Surabaya, East Java. Production is to begin in September, 1989.

Agra Products signed **M.C. Schroeder Co.**, Charlotte, NC as a sales representative for its processing system equipment.

Budzar Industries has added **Process Temperature Components**, Richmond, VA as a representative for its fluid heat transfer systems and industrial duty process cooling equipment.

Financial statements

American Biltrite reported second quarter net earnings of $2.9 million on sales of $39.7 million.

BASF Group reported pre-tax earnings of $1 billion for the first half of 1988 on sales of $12.7 billion.

Bemis Co. reported income for the second quarter of $9.9 million on sales of $275.8 million.

Blasius Industries reported a net loss for the year of $4.2 million with sales of $50.6 million.

BP America had a $621 million operating profit for the second quarter on revenues of $4.3 billion.

Bridgestone Corp. had pre tax earnings of $258 million for the first half of 1988 on sales of $2.19 billion.

Corcap Inc. reported a second quarter loss of $1.2 million with sales of $9.7 million.

Essex Chemical reported net income for the second quarter was $1.4 million on sales of $76.7 million.

Lydall, Inc. had a second quarter net income of $1.4 million on sales of $28.5 million.

NL Industries reported second quarter net income was $42.7 million on net sales of $393.8 million.

Parker Hannifin reported net income for fiscal 1988

RMA rubber report through May (figures in metric tons)

	YTD 1988	YTD 1987	% change
Total new rubber			
New rubber available	1,462,287	1,394,358	4.9
Imports	495,887	482,347	2.8
Exports	241,660	208,433	15.9
Apparent consumption	1,204,020	1,176,667	2.3
Total natural rubber			
Imports	375,657	360,579	4.2
Exports	19,545	15,089	29.5
Apparent consumption	356,743	341,523	4.5
Total synthetic rubber			
Production	966,400	914,011	6.0
Imports	120,230	121,768	-1.3
Exports	222,115	193,344	14.9
Apparent consumption	847,272	835,140	1.5
Total SBR			
Production	384,232	354,769	8.6
Imports	36,549	35,942	1.7
Exports	81,977	74,224	10.5
Apparent consumption	323,126	322,101	.3
Total nitrile			
Production	32,598	29,710	9.7
Imports	6,985	5,785	20.7
Exports	6,994	5,497	27.2
Apparent consumption	31,925	27,856	14.6
Polybutadiene			
Production	170,060	154,653	10.0
Imports	33,350	37,501	-5.7
Exports	29,741	27,460	8.3
Apparent consumption	170,458	162,725	4.8
Ethylene-propylene			
Production	108,360	108,082	.3
Imports	4,317	2,604	65.8
Exports	24,184	20,233	19.5
Apparent consumption	92,012	84,977	8.3
Butyl, polychloroprene, polyisoprene, silicone and other synthetic elastomers			
Production	270,148	264,797	2.0
Imports	37,029	39,936	-7.3
Exports	79,219	65,930	20.2
Apparent consumption	229,749	237,483	-3.3

Business Briefs

was $106.5 million on sales of $2.25 billion.

Park-Ohio reported a second quarter net loss of $528,000 with sales of $33.3 million.

Smith & Nephew reported operating profit of £52.1 million on sales of £267.1 million for the first six months.

The Standard Products Co. reported fiscal 1988 net income of $34.05 million on sales of $508.33 million.

Sumitomo Chemicals reported first half operating income of $170 million on sales of $2.09 billion.

Markets, news

A report in a Canadian newspaper indicates that Uniroyal Goodrich may be close to selling one of its two tire plants in Kitchener, Ontario. Under consideration from Cooper Tire, Yokohama and Continental is the Kitchener South plant that was built in 1961 and produces about 12,000 passenger, light truck, truck, bus and off-road tires a day.

Inventor T.K. Seiberling of Akron, OH has been issued a U.S. patent for a tire retreading process that produces less expensive and lighter weight retread, uses less material and can be cured in less time than conventional methods. The process consists of partially curing the cushion gum layer used between the carcass and the tread and between the ends of the tread. The cushion gum layer is subjected to electron radiation partial pre-cure, allowing the rubber to remain tacky on the surface for final assembly or bonding of the carcass and new tread. The invention reduces the time required to vulcanize the retread tire assembly and also reduces the gauge or thickness of the cushion gum layer, creating a less expensive, lighter weight, cooler running retread tire, according to the patent.

Due to sharply increasing costs of raw materials, labor, transportation and utilities, Goodyear's industrial products division has increased prices for its power transmission, conveyor belting and some industrial hose products. Prices were increased at a flat 6% for conveyor belting, and 4-6% for power transmission products. A price increase of 4-6% was also placed on all Spiraflex hose products.

List and off-list prices for most of Dow Corning's silicone products will be increased between 3-8%. Contract prices will be re-negotiated as soon as terms permit. Prices of silicone rubber compounds and silicone bases and gums were increased between 5-8% and general fluid, emulsion and sealant prices increased 3-8%. Increased raw material and higher operating costs were cited by the company for the increases.

RMA tire report through June (figures in thousands of units)

Passenger tires	YTD '88	YTD '87	% change
Shipments			
original equipment	28,272	28,906	-2.2
radial	24,092	24,450	-1.5
replacement	73,932	71,080	4.0
radial	68,912	63,227	9.0
export	4,840	2,714	78.3
radial	4,234	2,346	80.5
total	107,043	102,700	4.2
radial	97,238	90,023	8.0
Production	89,090	83,718	6.4
radial	80,598	72,884	10.6
Truck & bus tires			
Shipments			
original equipment	4,599	4,040	13.8
radial	3,379	2,818	19.9
replacement	16,227	16,306	-0.5
radial	9,383	8,622	8.8
export	1,708	941	81.6
radial	1,337	662	102.0
total	22,535	21,287	5.9
radial	14,098	12,101	16.5
Production	18,572	17,696	5.0
radial	11,276	10,032	12.4

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